ORDER NO. BSD0201M901

Service Manual

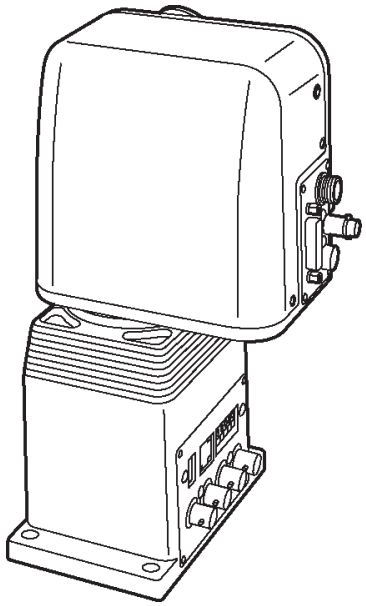
Indoor Pan / Tilt Head

AW-PH350P/E

Sec. 1 *Schematic Diagrams*

Sec. 2 *Circuit Board Diagrams*

Sec. 3 *Exploded Views & Replacement Part List*



Panasonic

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicans. Any attempt to service or repair the product or products deal with in this service manual by anyone else could result in serious injury or death.

AW-PH350P

Specifications

Power supply:
DC +12 V (connector)
Power consumption:
DC +12 V 2.5 A
(camera power included),
DC +12 V 0.7 A
(pan-tilt head only)

▭ indicates safety information.

Genlock input
Black burst or composite video,
1 V [p-p]/75 Ω (BNC connector)
Camera video output
Composite video:
1 V [p-p]/75 Ω
Component video:
Y = 1 V [p-p]/75 Ω
Pr = 0.7 V [p-p]/75 Ω
Pb = 0.7 V [p-p]/75 Ω
SDI
Camera/pan-tilt head control
RS-422 (8-pin modular jack)
Lamp control
Control signals (connector)
Option control
Control signals (connector)
Maximum cable length
3,280 feet (1,000 meters)
(when BELDEN 8281 coaxial cable and 10BaseT straight cable equivalent to UTP category 5 are used)
Maximum load capacity
8.8 lb (4 kg)
Allowable operating temperature
14°F to 113°F (–10°C to +45°C)
Allowable operating humidity
Max. 90%
Dimensions (W×H×D)
5 1/8″×9 5/8″×7 9/16″
(130×244×192 mm)
Weight
Approx. 7.7 lb (3.5 kg)
Finish
AV ivory paint (color approximating Munsell 7.9Y 6.8/0.8)

■Functions/performance

Tilt range
190 degrees (approx. ±95 degrees)
Tilt range may be subject to restrictions depending on the mounted camera cable, lens, etc.
Panning range
300 degrees (approx. ±150 degrees)
Maximum operating speed
25 degrees/sec. for panning,
20 degrees/sec. for tilting
Repeatability
Less than ±3′
Noise level
Less than NC30

AW-PH350E

Specifications

Power supply:
DC +12 V (connector)
Power consumption:
DC +12 V 2.5 A
(camera power included),
DC +12 V 0.7 A
(pan-tilt head only)

indique les consignes de sécurité.

Genlock input
Black burst or composite video,
1 V [p-p]/75 Ω (BNC connector)
Camera video output
Composite video:
1 V [p-p]/75 Ω
Component video:
Y = 1 V [p-p]/75 Ω
Pr = 0.525 V [p-p]/75 Ω
Pb = 0.525 V [p-p]/75 Ω
SDI
Camera/pan-tilt head control
RS-422 (8-pin modular jack)
Lamp control
Control signals (connector)
Option control
Control signals (connector)
Maximum cable length
1,000 meters
(when BELDEN 8281 coaxial cable and 10BaseT straight cable equivalent to UTP category 5 are used)
Maximum load capacity
4 kg
Allowable operating temperature
–10°C to +45°C
Allowable operating humidity
Max. 90%
Dimensions (W×H×D)
130×244×192 mm
Weight
Approx. 3.5 kg
Finish
AV ivory paint (color approximating Munsell 7.9Y 6.8/0.8)

■Functions/performance

Tilt range
190 degrees (approx. ±95 degrees)
Tilt range may be subject to restrictions depending on the mounted camera cable, lens, etc.
Panning range
300 degrees (approx. ±150 degrees)
Maximum operating speed
25 degrees/sec. for panning,
20 degrees/sec. for tilting
Repeatability
Less than ±3´
Noise level
Less than NC30

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5MΩ.

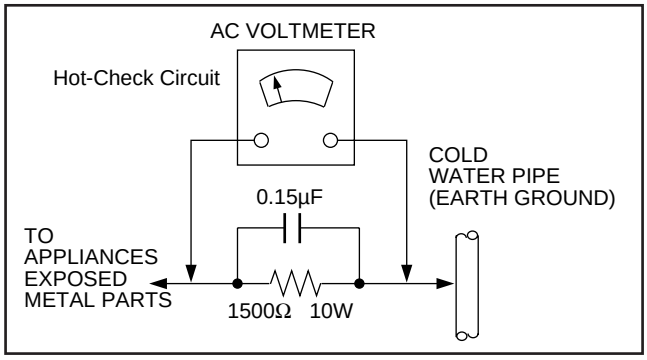


Figure1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ , 10W resistor, in parallel with a 0.15μ F capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverses the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ED) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as “anti-static” can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it.
   (most replacement ES devices are package with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpacked replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing x-radiation.

Note : It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ± 0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an x-radiation possibility, it is essential to use the specified picture tube.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

CAUTION:

Do not install or place this unit in a bookcase, built-in cabinet or in another confined space in order to keep well ventilated condition. Ensure that curtains and any other materials do not obstruct the ventilation condition to prevent risk of electric shock or fire hazard due to overheating.

WARNING:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

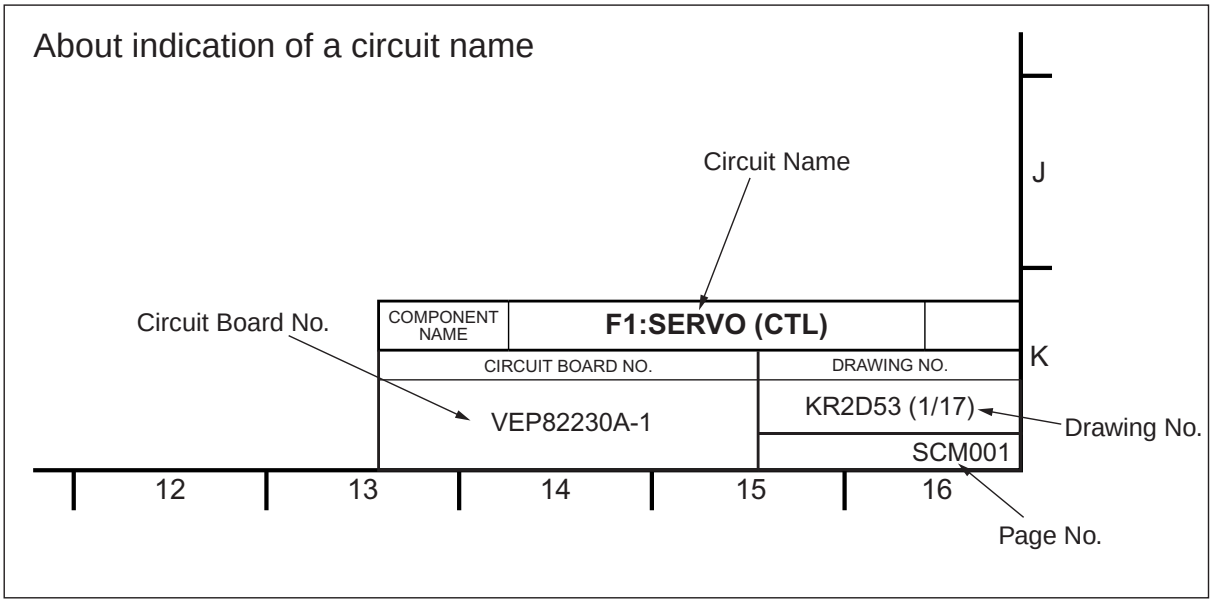
FCC Note:
This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Replace battery with part No. VL3032/1GUF only.
Use of another battery may present a risk of fire or explosion.
Caution—Battery may explode if mistreated.
Do not recharge, disassemble or dispose of in fire.

SECTION 1

SCHEMATIC DIAGRAMS



NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST, SECTION3

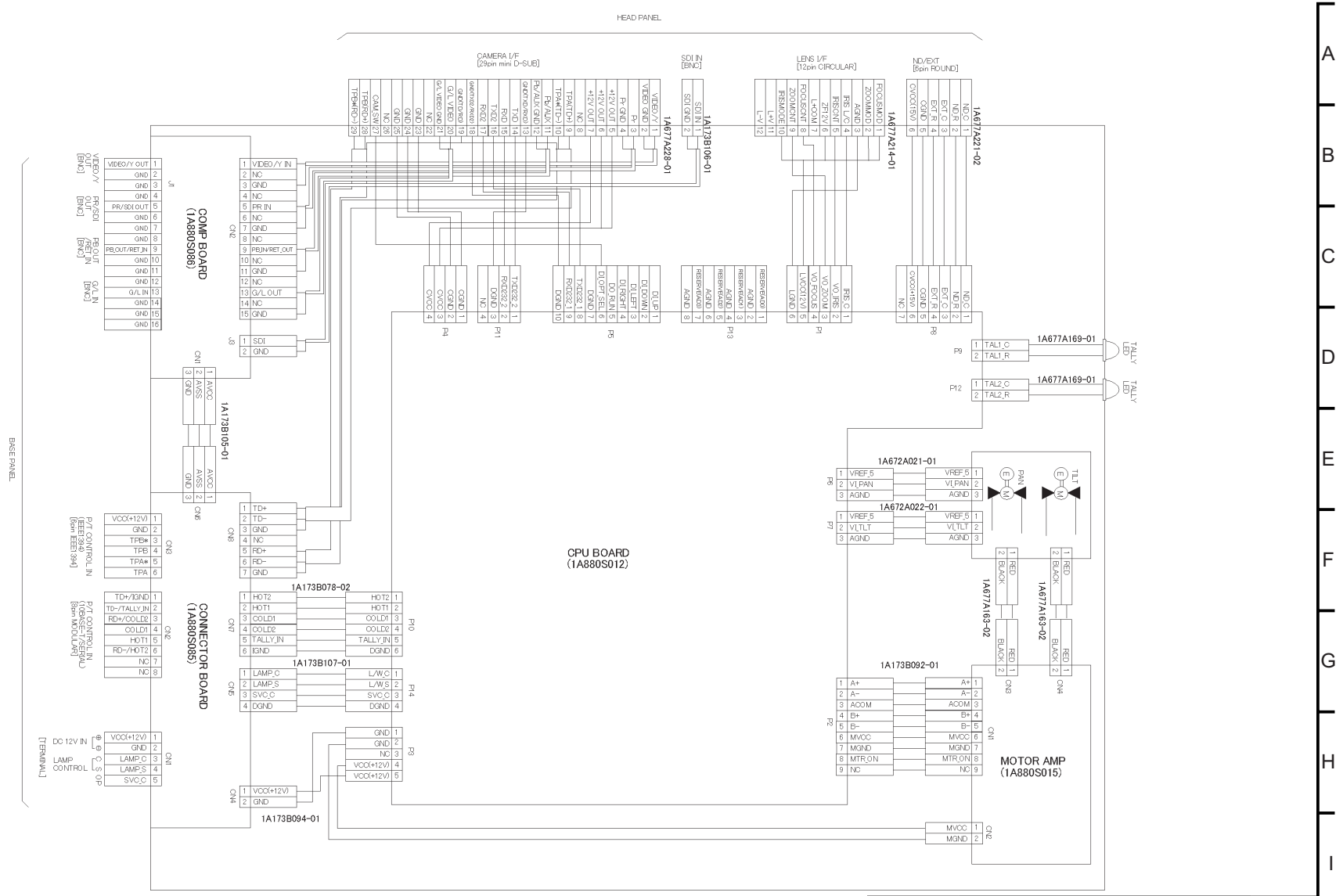
CAUTION

THE ☐ MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

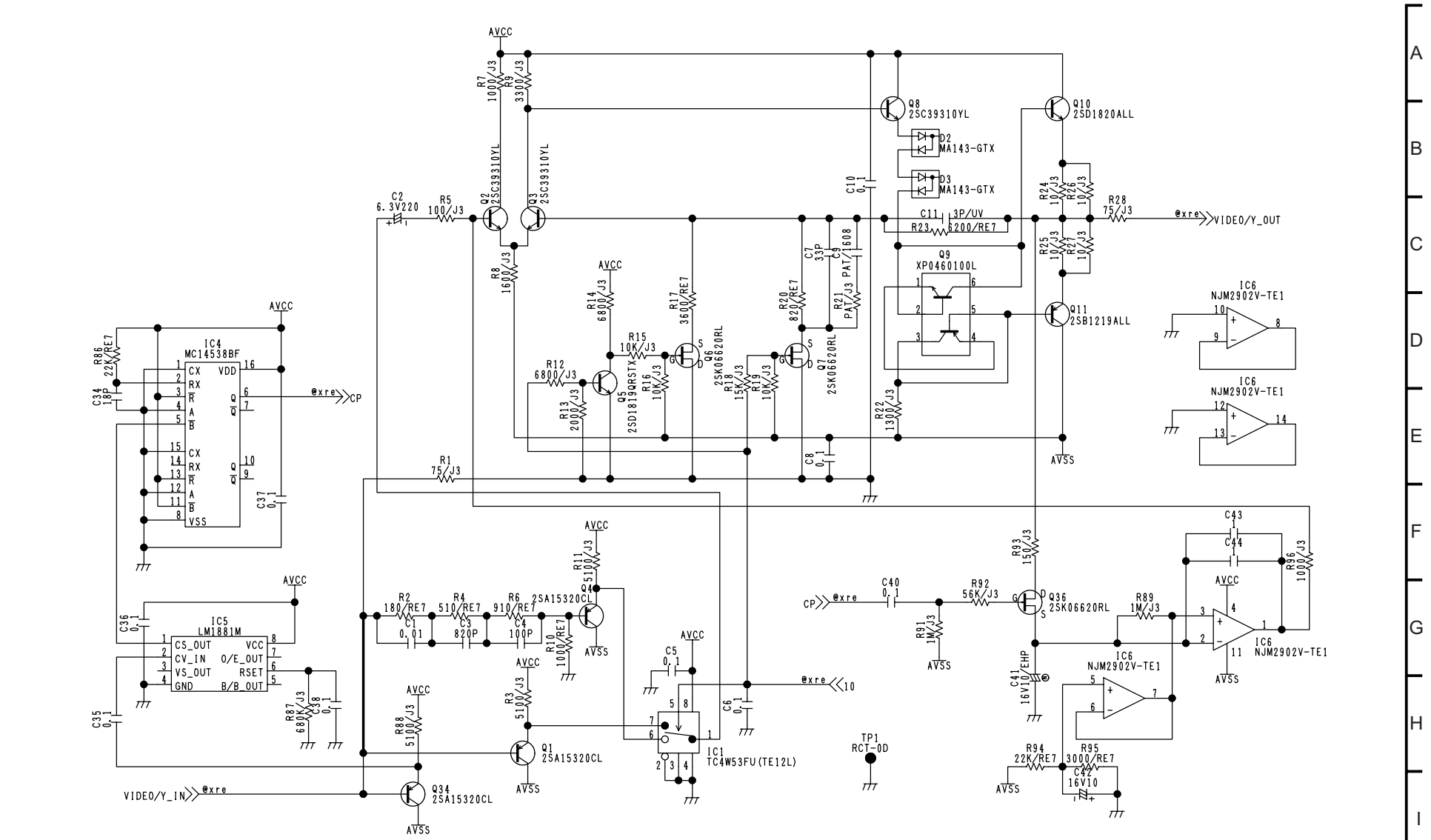
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CONTENTS

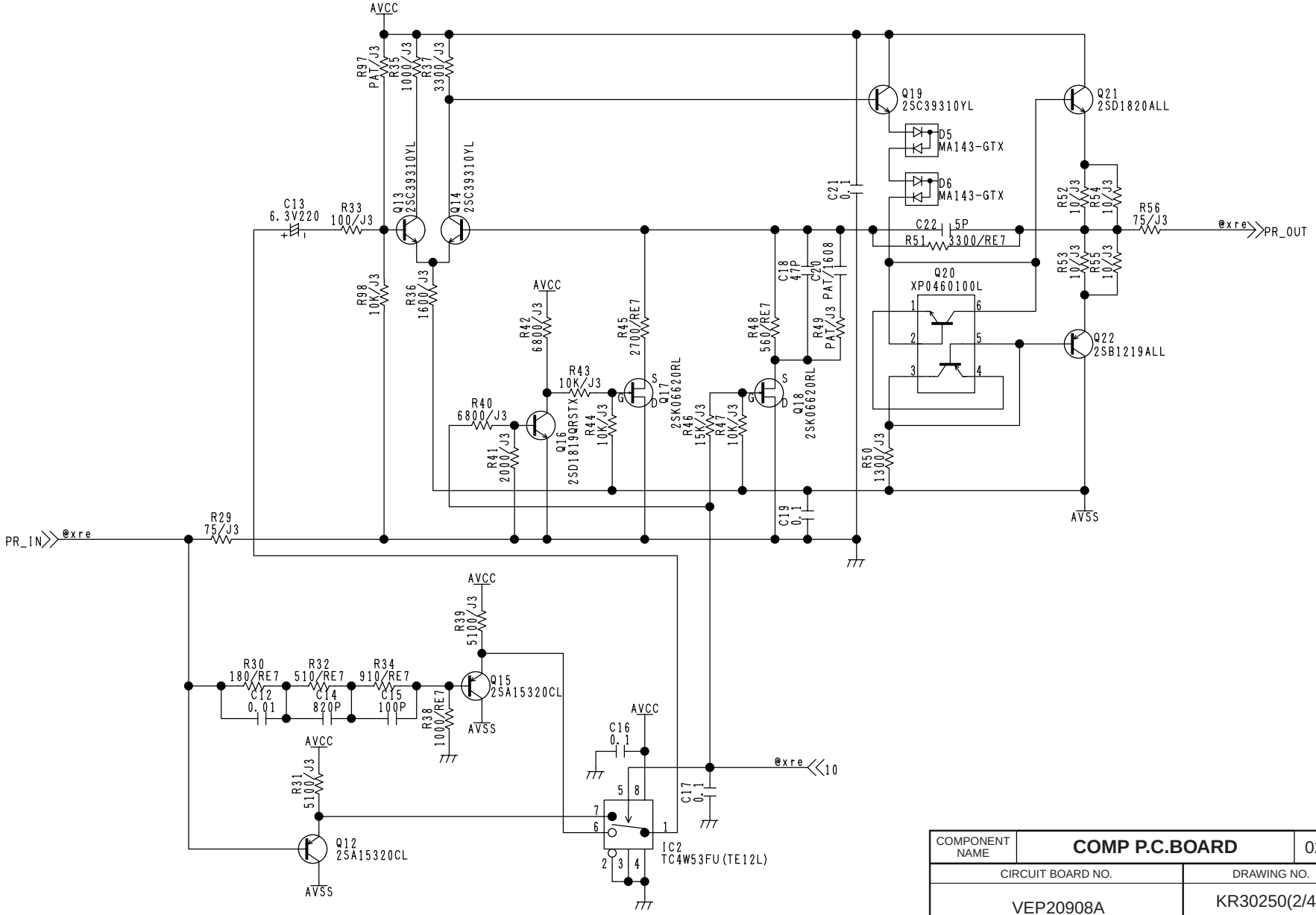
INTERCONNECTION SCM001
COMP P.C.BOARD SCM002
CON P.C.BOARD SCM006
MOTOR AMP P.C.BOARD SCM007
CPU P.C.BOARD SCM008



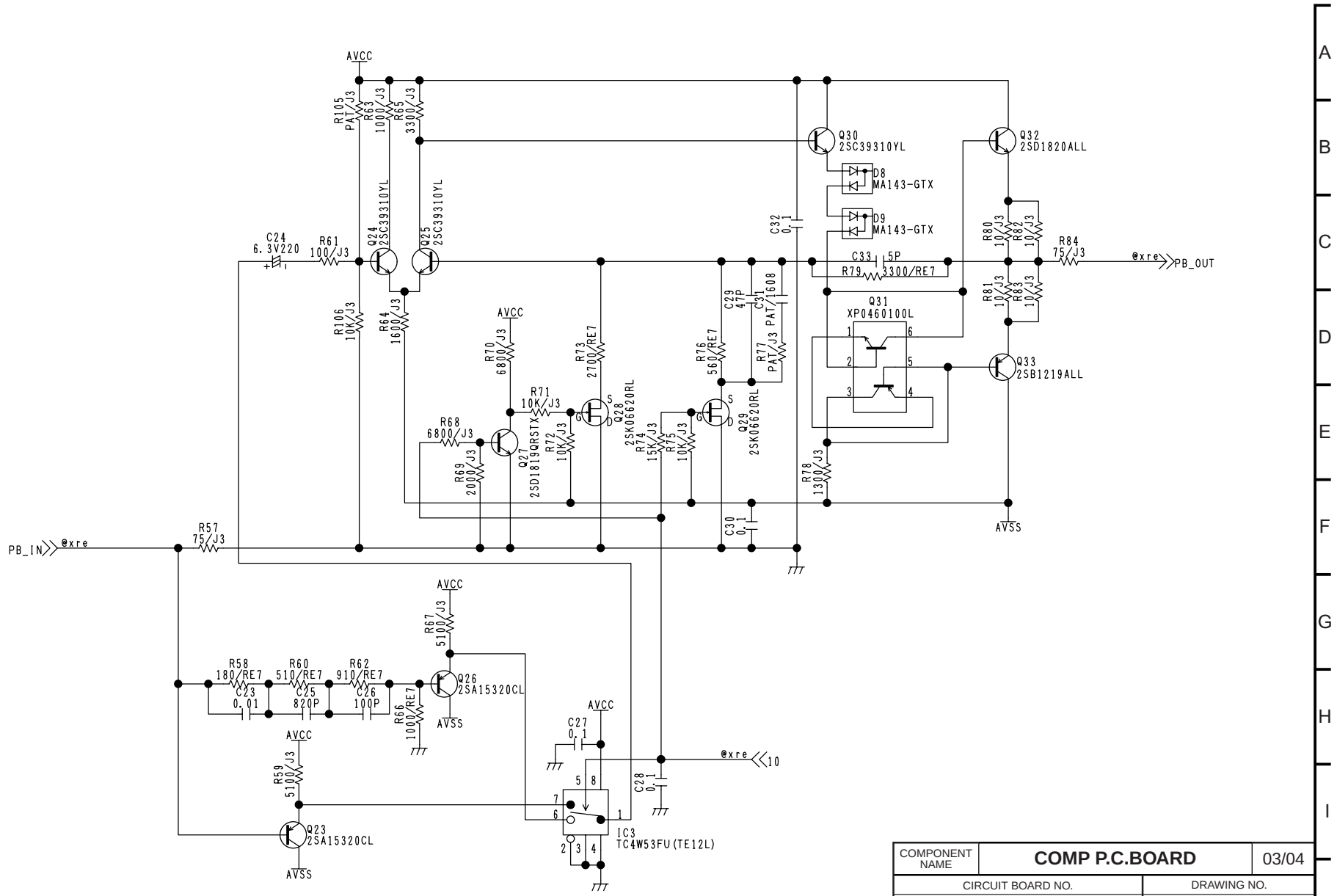
COMPONENT NAME	**INTERCONNECTION**		01/01
CIRCUIT BOARD NO.		DRAWING NO.	
			SCM001



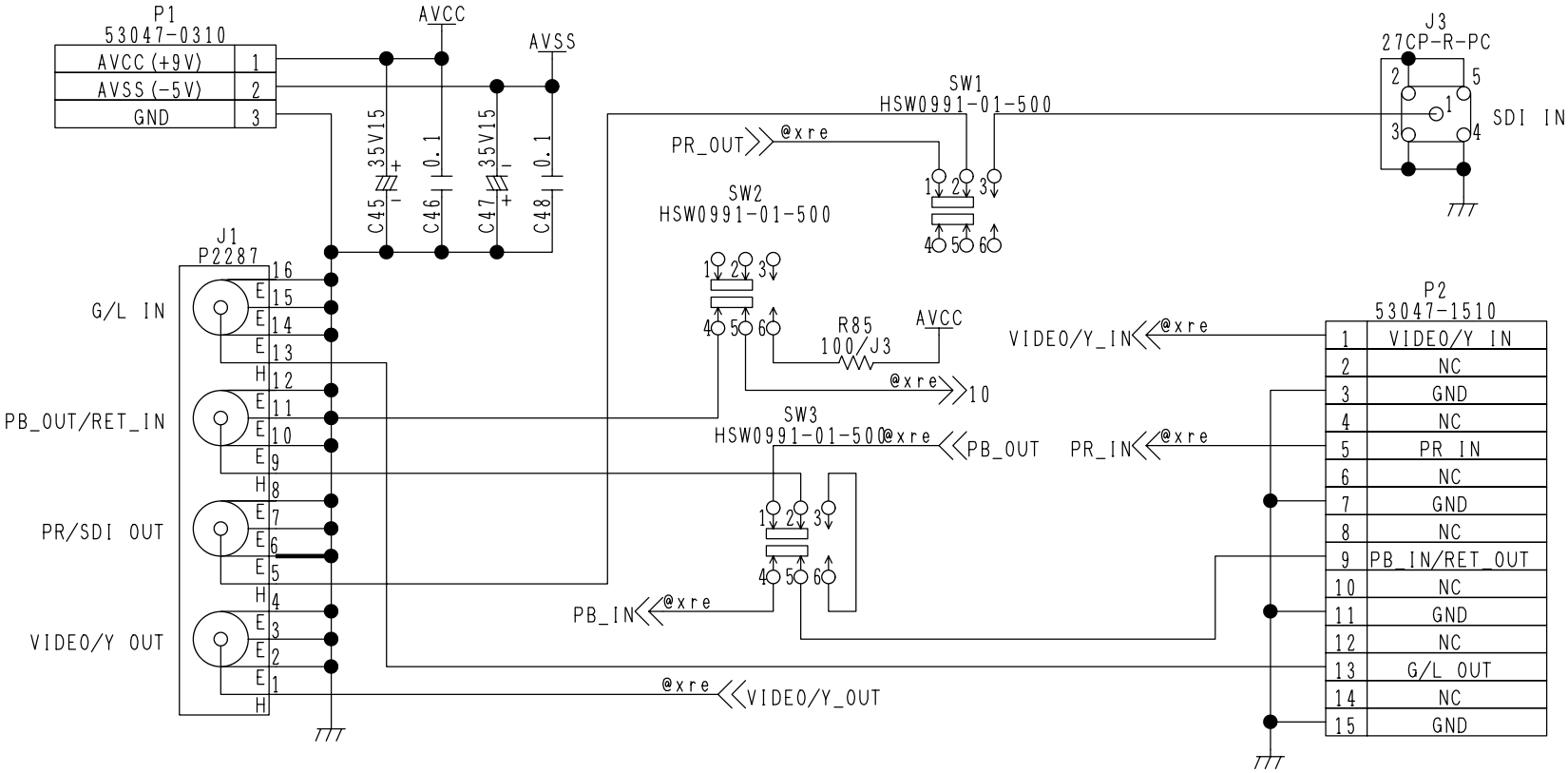
COMPONENT NAME	**COMP P.C.BOARD**	01/04
CIRCUIT BOARD NO.	DRAWING NO.	
VEP20908A	KR30250 (1/4)	
	SCM002	



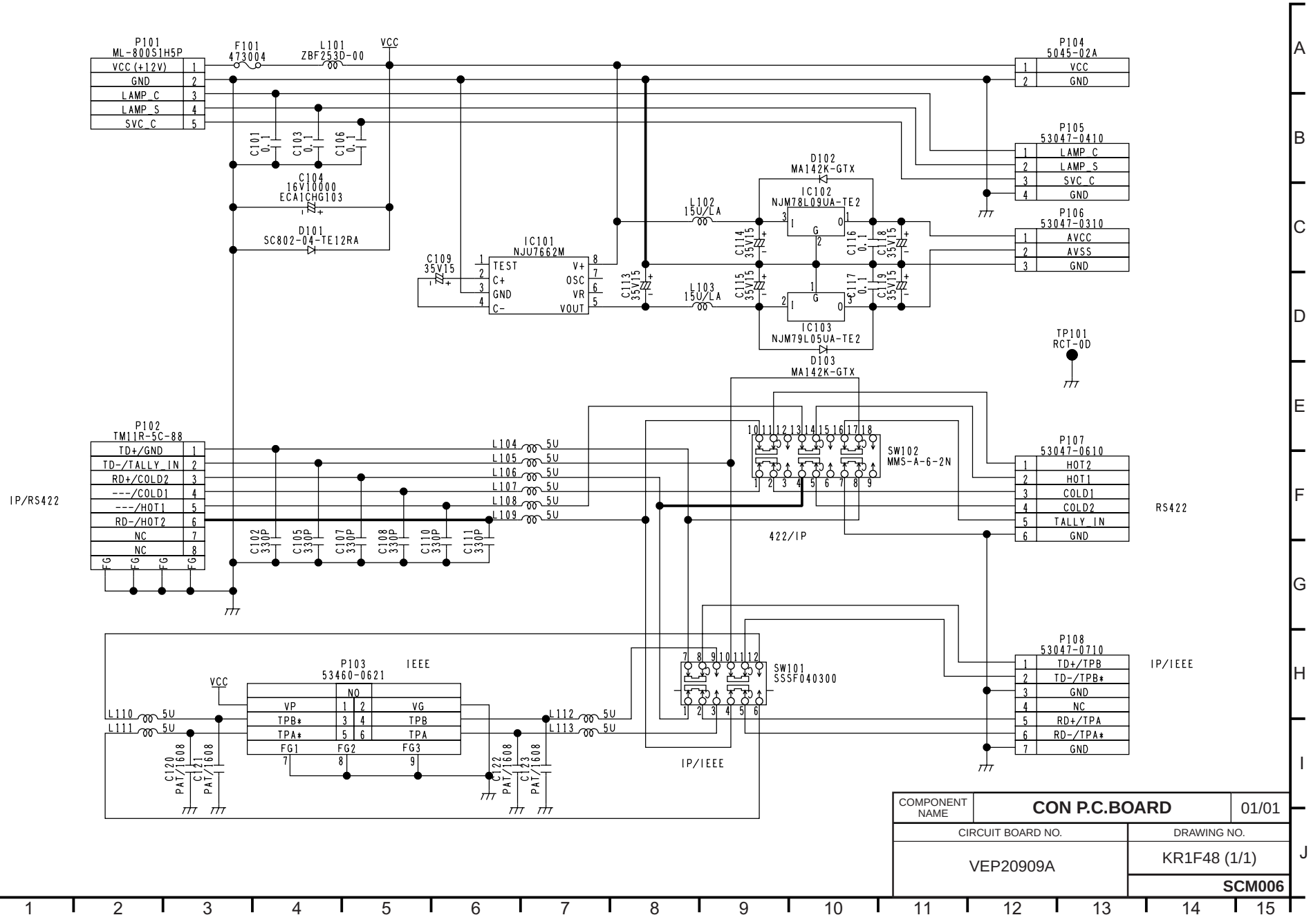
COMPONENT NAME	**COMP P.C.BOARD**	02/04
CIRCUIT BOARD NO.		DRAWING NO.
VEP20908A		KR30250(2/4)
		SCM003



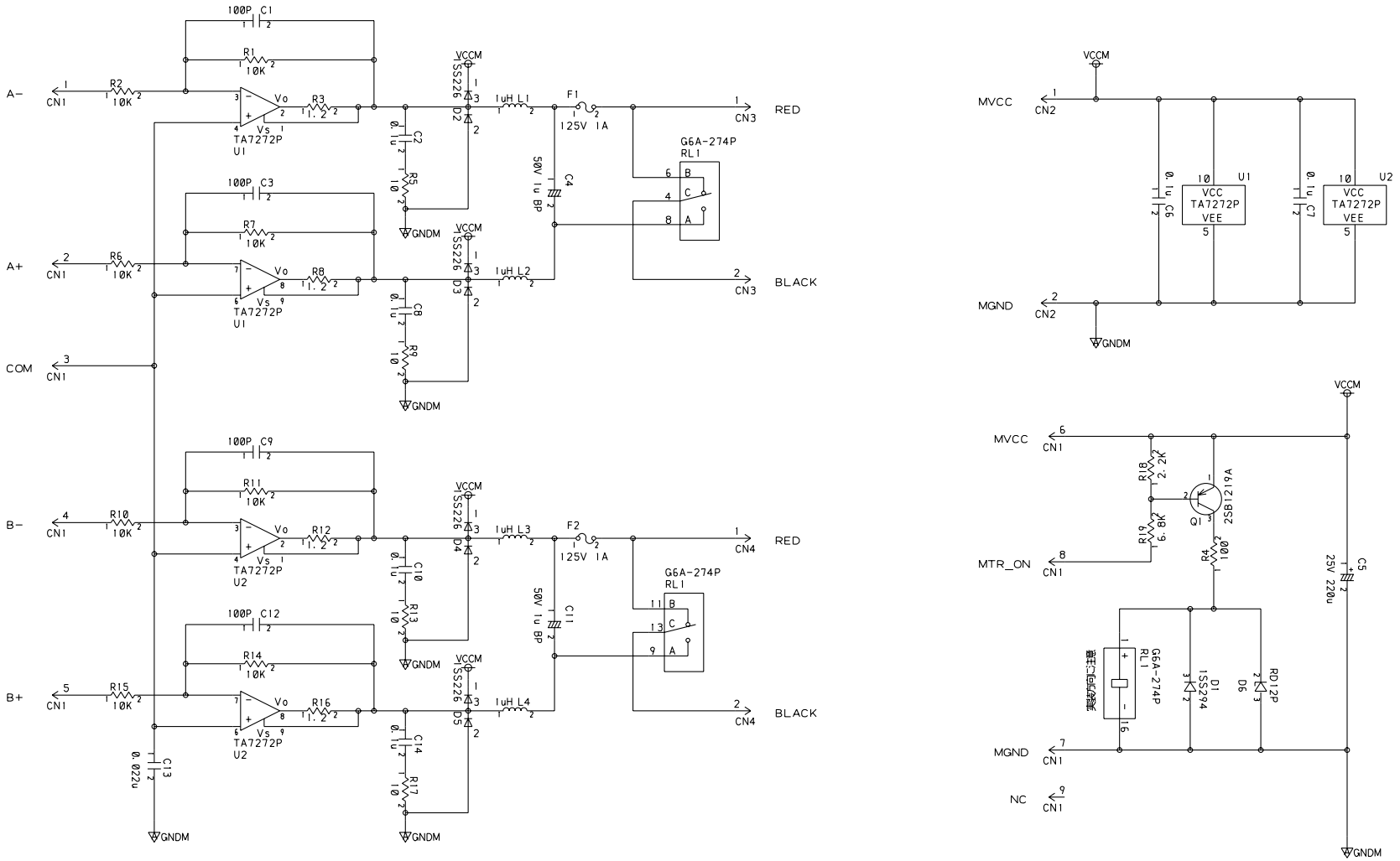
COMPONENT NAME	COMP P.C.BOARD	03/04
CIRCUIT BOARD NO.		DRAWING NO.
VEP20908A		KR30250 (3/4)
		SCM004



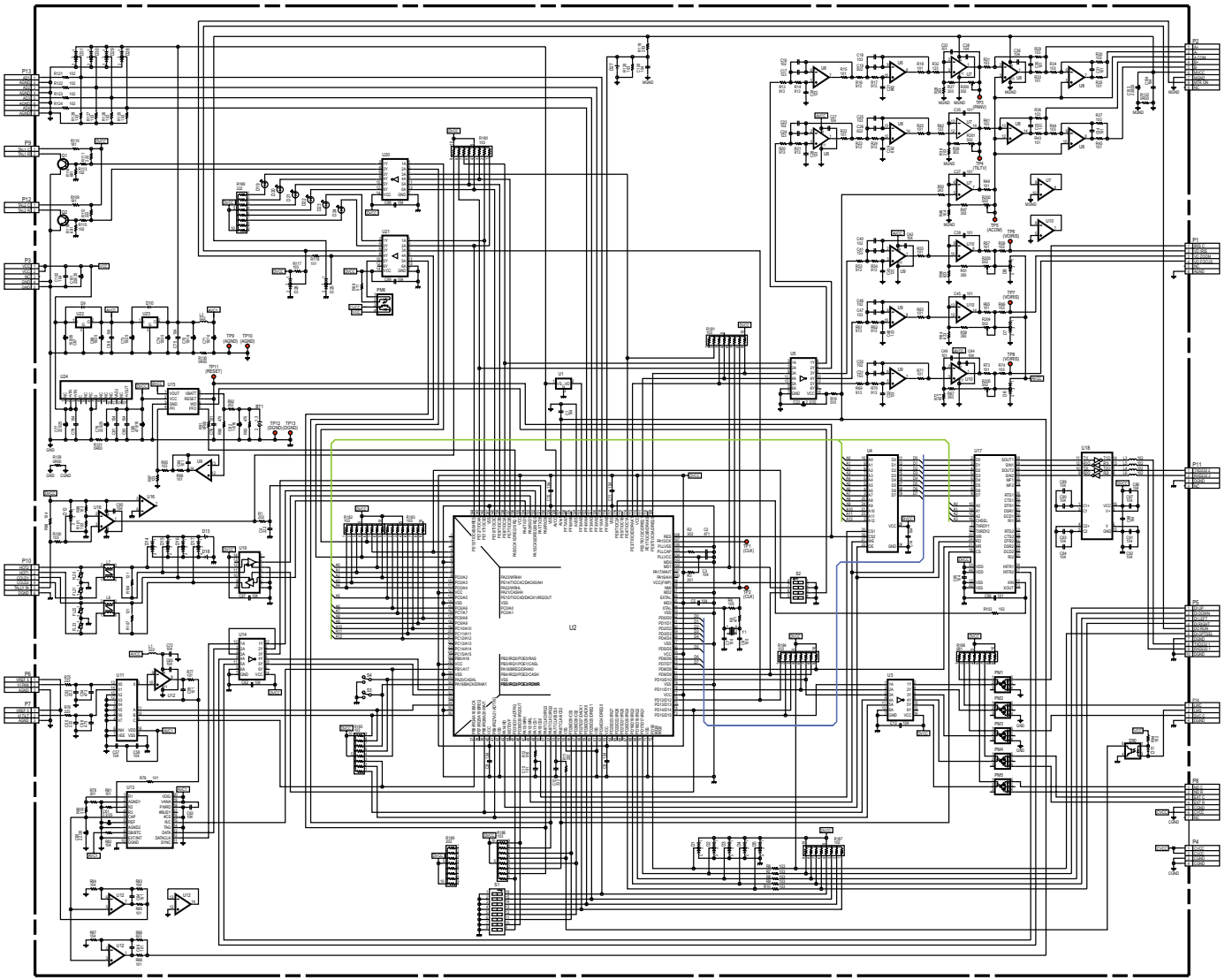
COMPONENT NAME	COMP P.C.BOARD	04/04
CIRCUIT BOARD NO.		DRAWING NO.
VEP20908A		KR30250 (4/4)
		SCM005



COMPONENT NAME	CON P.C.BOARD	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
VEP20909A	KR1F48 (1/1)	
	SCM006	



COMPONENT NAME	**MOTOR AMP P.C.BOARD**	01/01
CIRCUIT BOARD NO.	DRAWING NO.	
1A880S015		
	SCM007	



COMPONENT NAME	CPU P.C.BOARD	01/01
CIRCUIT BOARD NO.		DRAWING NO.
WPH60JKZ1A		SCM008

A B C D E F G H I J

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

SECTION 2

CIRCUIT BOARD DIAGRAMS

NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST, SECTION3

CAUTION

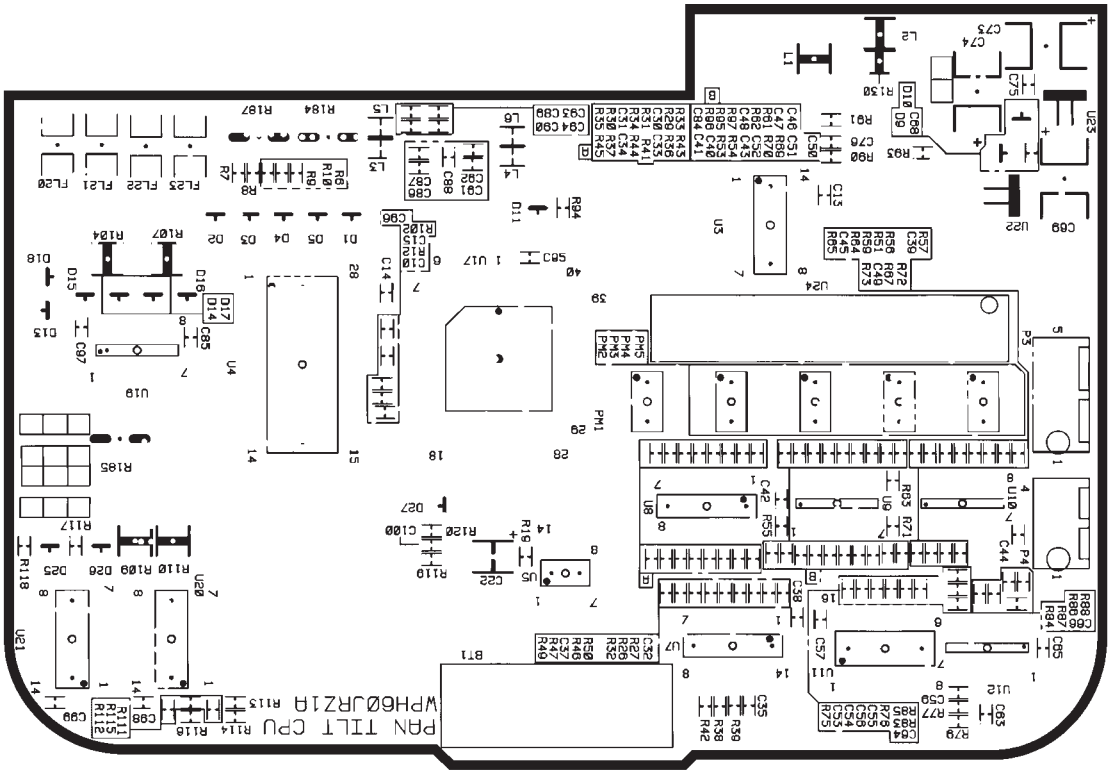
THE ▭ MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CONTENTS

CPU P.C.BOARD (WPH60JKZ1A) CBA-1
COMP P.C.BOARD (VEP20908A) CBA-2
CON P.C.BOARD (VEP20909A) CBA-2
MOTOR P.C.BOARD (1A880S015) CBA-2

CPU P.C.BOARD (WPH60JKZ1A)



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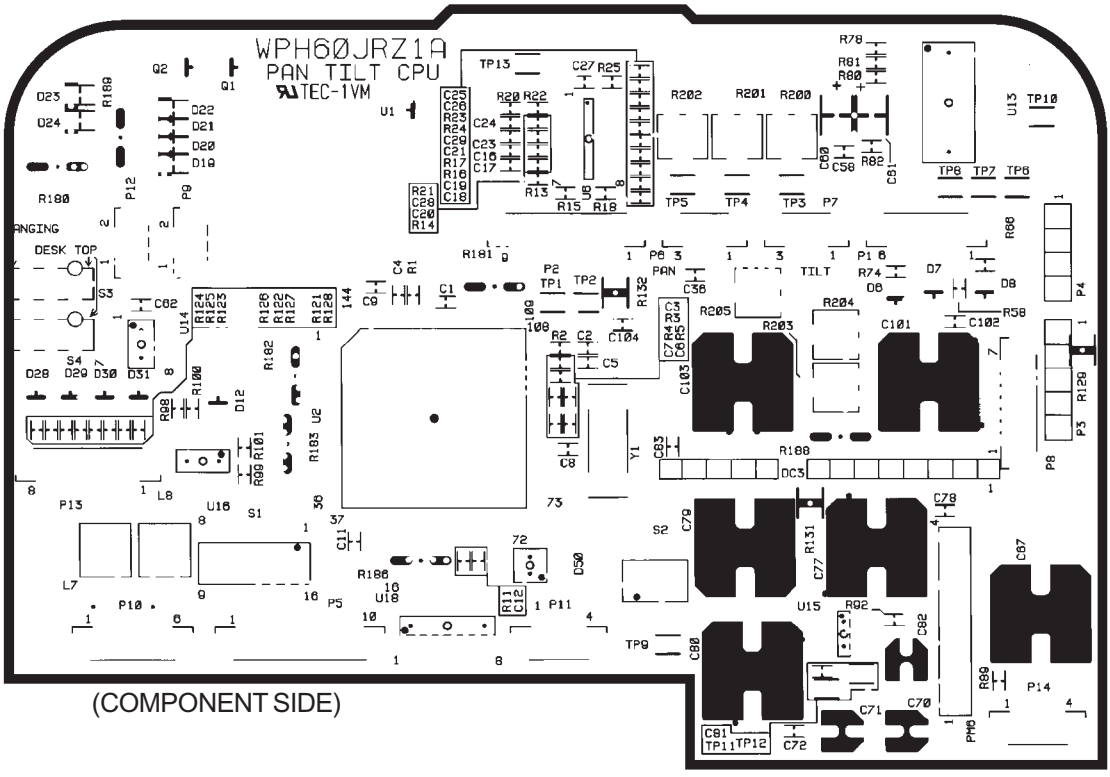

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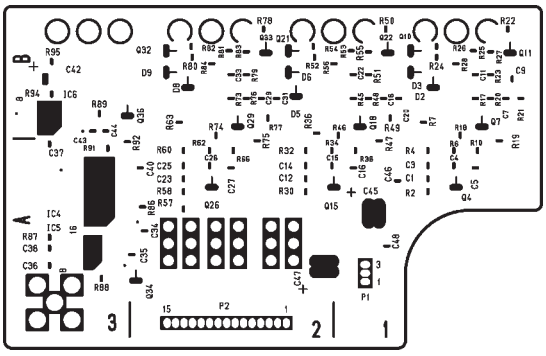
COMP P.C.BOARD (VEP20908A)



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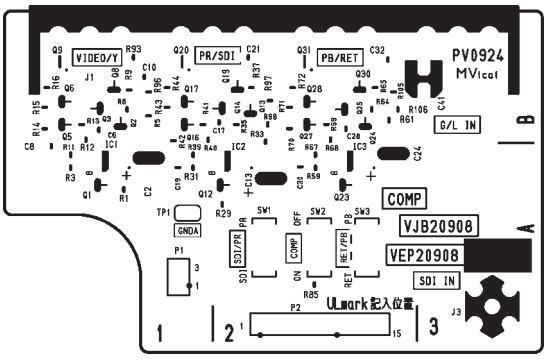
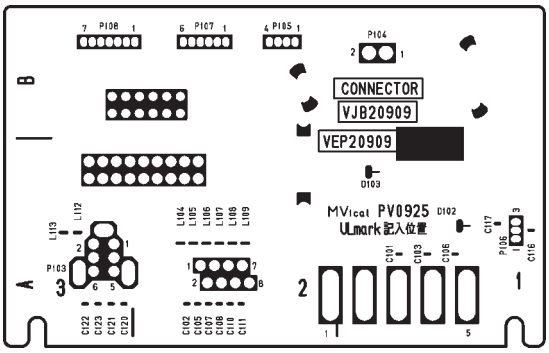


(COMPONENT SIDE)

CON P.C.BOARD (VEP20909A)



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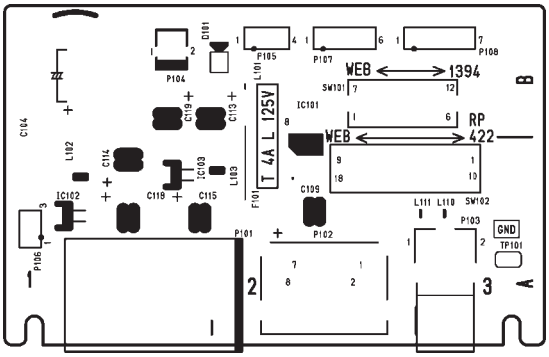

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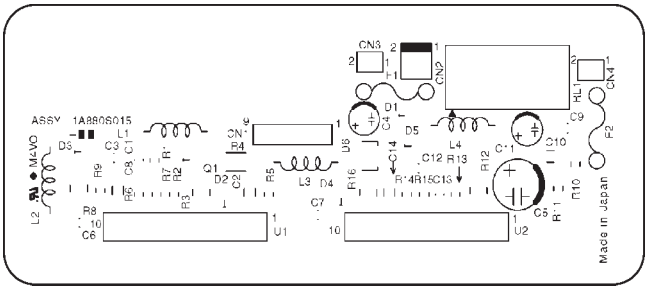
MOTOR P.C.BOARD (1A880S015)



SECTION 3

EXPLODED VIEWS
&
REPLACEMENT PARTS LISTS

Note:

1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS, all capacitors are in MICROFARADS (μF), P=μμF.
3. The P.C. Board untils marked with "■" shown below the main assembled parts.
4. The parts marked with Ⓔ on the exploded view show the electric parts.
5. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
   After the discontinuation of this assembly in production, it will no longer be available.

CONTENTS

Casing & Packing Parts Assembly PRT-1
Electrical Replacement Parts List PRT-4

Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.

CASING & PACKING PARTS ASSEMBLY

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
M1	1A33B038-01	LOGO PLATE FOR COVER	1	
M2	1A641A226-03	COVER	1	
M4	1A405A002-01	SHEET FOR COVER	1	
M5	1A405A003-01	SHEET FOR COVER	1	
M12	1A880S024-01	GEAR HOUSING ASS'Y	1	
M28	1A108F056-06	POST FOR HEAD	1	1A108F056-12
M29	1A108A001-05	CABLE CLAMP FOR HEAD	1	
M30	1A331A246-01	CHASSIS FOR HEAD	1	
M31	1A331A247-01	BODY FOR BASE	1	
M32	1A355L147-01	I/O PANEL FOR HEAD	1	
M33	1A355L134-01	PANEL A FOR BASE	1	
M34	1A101A608-01	O-RING FOR BODY	1	
M35	1A355L145-01	I/O PANEL FOR BASE	1	
M36	1A108F092-02	BLOCK NUT FOR BASE	1	
M37	1A108F056-28	POST FOR BASE	1	
M38	1A101A522-01	O-RING FOR FLANGE	1	
M39	1A363B041-01	FLANGE	1	1A353B039-01
M40	1A399A346-01	PLATE	1	
M41	1A880S075-01	STAY	1	
M42	1A411A102-01	PIN FOR STAY	1	
M43	1A352B203-01	CUSHION FOR STAY	1	
M44	1A411A102-01	SCREW FOR STAY	1	
M45	1A355L136-01	PANEL C FOR HEAD	1	
M46	1A355L134-01	PANEL A FOR BASE	1	
M52	1A357A144-01	PANEL B FOR BASE	1	
M53	1A880S025-01	GEAR HEAD ASS'Y (TILT)	1	
M54	1A355C914-01	MOTOR BRACKET	2	
CN101	R03-R6M	CONNECTOR (ND/EXIT)	1	
CN102	K1AA112J0004	CONNECTOR (LENS I/F)	2	
CN103	K1FB11SH0001	CONNECTOR (CAMERA I/F)	1	
1	LB2-4	PAN HEAD SCREWS	24	
2	NM2-1	HEXAGON HEAD NUTS	2	
3	AM3X0.5-8	HEXAGON CAP SCREW	3	
4	AM3X0.5-10	HEXAGON CAP SCREW	11	
5	LB3X0.5-6	PAN HEAD SCREW	3	
6	LBWSM3-10B	PAN HEAD SCREW AND WASHER	4	
7	LB2.6-5	PAN HEAD SCREW	4	
8	066N406-80	BINDING HEAD SCREW	2	
9	NM3X0.5-1	HEXAGON HEAD NUT	2	
10	LB3X0.5-4	PAN HEAD SCREW	4	
11	LD4X0.7-12	BINDING HEAD SCREW	4	
12	LD4X0.7-10B	BINDING HEAD SCREW	2	
13	AM3X0.5-12	CAP SCREW	3	
14	1A108F091-02	SCREW	6	
E1	WPH60JKZ1A	CPU P.C.BOARD	1	
E2	VEP20908A	COMP P.C.BOARD	1	
E3	VEP20909A	CONNECTION P.C.BOARD	1	
E4	1A880S015	MOTOR AMP P.C.BOARD	1	

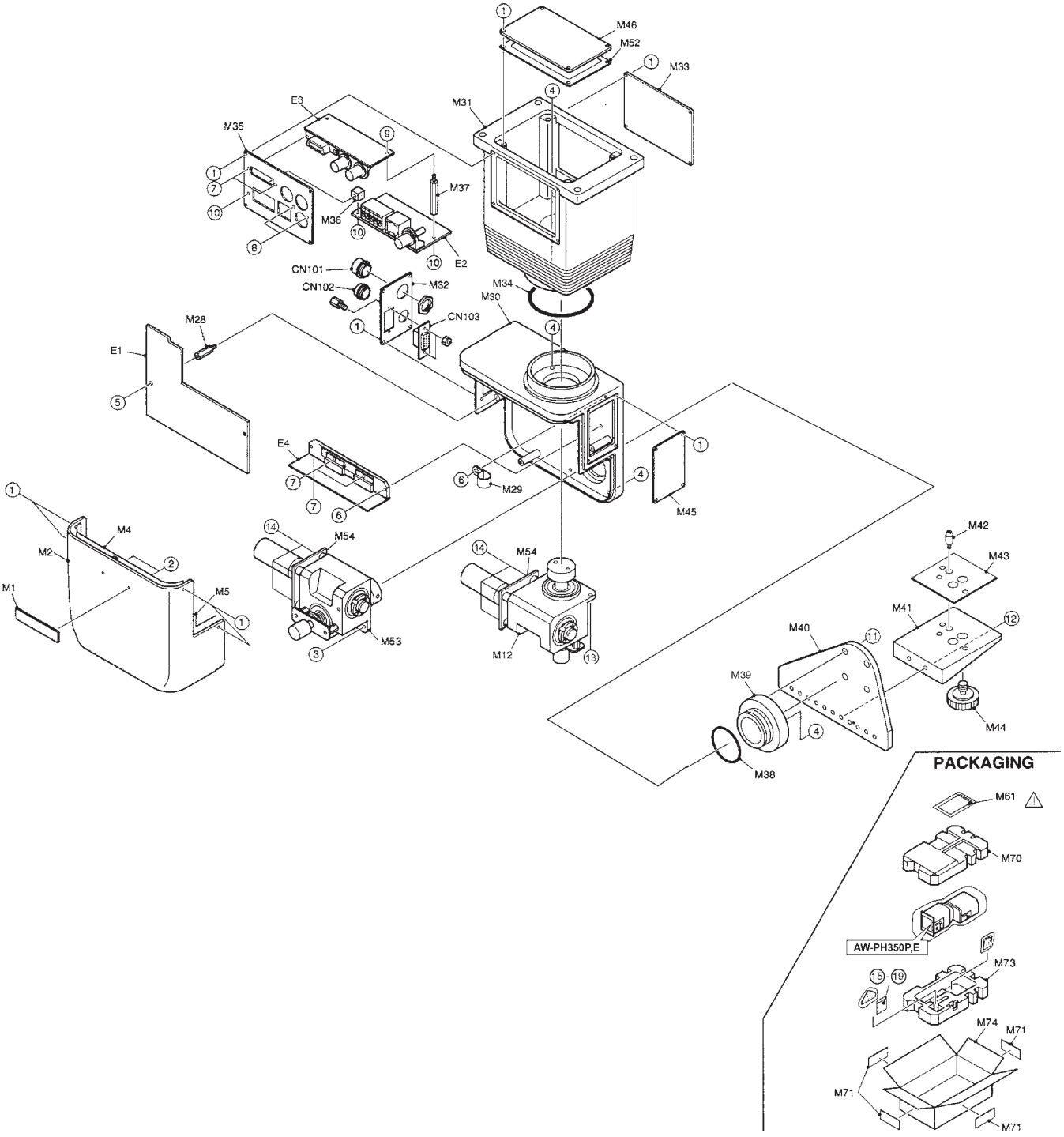
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
M61	VQT9583	OPERATING INSTRUCTIONS	1	FOR AW-PH350P
⚠ M61	VQT9584	OPERATING INSTRUCTIONS	1	FOR AW-PH350E
M70	6D1A019A	CUSHION (TOP)	1	
M71	VQL9822	PACKING LABEL	4	
M73	6D1A020A	CUSHION (BOTTOM)	1	
M74	VPG0M05	PACKING CASE	1	
15	XYM26+F6FN	SCREW	1	
16	XYM4+F6FN	SCREW	2	
17	XYM4+F10FN	SCREW	1	
18	XSB4+10FN	SCREW	4	
19	1A117C008-01	CHAIN	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.

CASING & PACKING PARTS ASSEMBLY



Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.

ELECTRICAL REPLACEMENT PARTS LIST

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■ E1	WPH60JKZ1A	CPU P.C.BOARD	1	(RTL)
■ E2	VEP20908A	COMP P.C.BOARD	1	(RTL)
■ E3	VEP20909A	CONNECTION P.C.BOARD	1	(RTL)
■ E4	1A880S015	MOTOR AMP P.C.BOARD	1	(RTL)
■ E1	WPH60JKZ1A	CPU P.C.BOARD	1	(RTL)
BT1	CR2032	BATTERY	1	
C1	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C2	YGM1C471J1HT	C.CAPACITOR 50V 470P	1	
C3	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C4	GRM9B222K5H	C.CAPACITOR 50V 2200P	1	
C5	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C6,C7	F1H1H100A017	C.CAPACITOR 50V 10P	2	
C8-11	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	4	F1H1E104A016
C12	GRM9B222K5H	C.CAPACITOR 50V 2200P	1	
C13,14	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	2	F1H1E104A016
C15	GRM9CH151J5H	C.CAPACITOR 150P	1	
C16	F1H1H102A190	C.CAPACITOR 50V 1000P	1	
C17	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C18	YGM1B103K1HT	C.CAPACITOR 50V 0.01U	1	
C19	F1H1H822A190	C.CAPACITOR 50V 8200P	1	
C20	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C21	F1H1H682A190	C.CAPACITOR 50V 6800P	1	
C22	SK31V225MRB	T.CAPACITOR CH 35V 2.2U	1	
C23	F1H1H102A190	C.CAPACITOR 50V 1000P	1	
C24	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C25	YGM1B103K1HT	C.CAPACITOR 50V 0.01U	1	
C26	F1H1H822A190	C.CAPACITOR 50V 8200P	1	
C27	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C28	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C29	F1H1H682A190	C.CAPACITOR 50V 6800P	1	
C30-35	GRM9CH101J5H	C.CAPACITOR 100P	6	
C36	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C37	GRM9CH101J5H	C.CAPACITOR 100P	1	
C38	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C39	GRM9CH101J5H	C.CAPACITOR 100P	1	
C40	F1H1H102A190	C.CAPACITOR 50V 1000P	1	
C41	F1H1H153A190	C.CAPACITOR 50V 0.015U	1	
C42	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C43	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C44	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C45	GRM9CH101J5H	C.CAPACITOR 100P	1	
C46	F1H1H102A190	C.CAPACITOR 50V 1000P	1	
C47	F1H1H153A190	C.CAPACITOR 50V 0.015U	1	
C48	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C49	GRM9CH101J5H	C.CAPACITOR 100P	1	
C50	F1H1H102A190	C.CAPACITOR 50V 1000P	1	
C51	F1H1H153A190	C.CAPACITOR 50V 0.015U	1	
C52	F1H1H123A190	C.CAPACITOR 50V 0.012U	1	
C53	GRM9B222K5H	C.CAPACITOR 50V 2200P	1	
C54	YGM1B473K1CT	C.CAPACITOR 50V 0.047U	1	
C55	GRM9B222K5H	C.CAPACITOR 50V 2200P	1	
C56	YGM1B473K1CT	C.CAPACITOR 50V 0.047U	1	
C57,58	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	2	F1H1E104A016

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C59	GRM9CH101J5H	C.CAPACITOR 100P	1	
C60,61	SK31V225MRB	T.CAPACITOR CH 35V 2.2U	2	
C62,63	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	2	F1H1E104A016
C64	GRM9CH101J5H	C.CAPACITOR 100P	1	
C65	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C66	GRM9CH101J5H	C.CAPACITOR 100P	1	
C67	F2G1V1010002	E.CAPACITOR 35V 100U	1	
C68	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C69	F3H1V1060004	T.CAPACITOR CH 35V 10U	1	
C70,71	VWRVS1C100M	E.CAPACITOR 16V 10U	2	
C72	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C73,74	F3H1V1060004	T.CAPACITOR CH 35V 10U	2	
C75	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C76	GRM9CH151J5H	C.CAPACITOR 150P	1	
C77	F2G1E2210003	E.CAPACITOR 25V 220U	1	
C78	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C79	F2G1E2210003	E.CAPACITOR 25V 220U	1	
C80	F2H1A4710001	E.CAPACITOR 25V 470U	1	
C81	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C82	YWRVS1C100M	E.CAPACITOR 16V 10U	1	
C83	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C84	GRM9CH151J5H	C.CAPACITOR 150P	1	
C85	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C86,87	YGM1B104Z1CT	C.CAPACITOR 16V 0.1U	2	
C88	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C89-94	YGM1B104Z1CT	C.CAPACITOR 16V 0.1U	6	
C95	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C96	GRM9CH101J5H	C.CAPACITOR 100P	1	
C97-00	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	4	F1H1E104A016
C101	F2G1E2210003	E.CAPACITOR 25 220U	1	
C102	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
C103	F2G1E2210003	E.CAPACITOR 25 220U	1	
C104	YGM1F104Z1ET	C.CAPACITOR 25V 0.1U	1	F1H1E104A016
D1-D8	B0ADDJ000003	DIODE	8	
D9-11	B0JCEE000001	DIODE	3	
D12	B0ADDJ000003	DIODE	1	
D13	B0ZBZ0000029	DIODE	1	
D14-17	B0ADDJ000003	DIODE	4	
D18	B0ZBZ0000029	DIODE	1	
D25,26	B0ADDJ000003	DIODE	2	
D27	B0BC3R600006	DIODE	1	
D28-31	B0ADDJ000003	DIODE	4	
D50	B3PBA0000048	DIODE	1	
DS19-24	TLGD1002	DIODE	6	
FL20-23	J0LB00000020	FILTER	4	
L1,L2	G1C100J00001	COIL	2	
L3-L6	J0JCC0000004	FILTER	4	
L7,L8	Z1YS51R5-2P	COIL	2	
P1	K1KA06A00086	CONNECTOR	1	
P2	K1KA09A00060	CONNECTOR	1	
P3	K1KA05A00044	CONNECTOR	1	
P4	K1KA04A00052	CONNECTOR	1	
P5	YW533981090	PLUG	1	
P6,P7	K1KA03A00063	CONNECTOR	2	
P8	K1KA07A00079	CONNECTOR	1	
P9	K1KA02A00066	CONNECTOR	1	
P10	K1KA06A00086	CONNECTOR	1	
P11	K1KA04A00073	CONNECTOR	1	
P12	K1KA02A00066	CONNECTOR	1	
P13	K1KA08A00153	CONNECTOR	1	
P14	K1KA04A00073	CONNECTOR	1	
PM1-M5	AQV212S	RELAY	5	
PM6	AQZ102	RELAY	1	
Q1,Q2	B1ABCF000031	TRANSISTOR	2	
R1	ERJ3GEYJ202	M.RESISTOR CH 1/16W 2K	1	
R2	ERJ3RHD302	M.RESISTOR CH 1/16W 3K	1	
R3	ERJ3RHD201	M.RESISTOR CH 1/16W 200	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4	ERJ3GEYF105	M.RESISTOR CH 1/16W 1M	1	
R5	ERJ3RHD471	M.RESISTOR CH 1/16W 470	1	
R6-10	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	5	
R11	ERJ3GEYJ202	M.RESISTOR CH 1/16W 2K	1	
R12	ERJ3GEYJ510	M.RESISTOR CH 1/16W 51	1	
R13,14	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R15	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R16,17	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R18	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R19	ERJ3GEYJ510	M.RESISTOR CH 1/16W 51	1	
R20,21	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R22	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R23,24	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R25	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R26	ERJ3RHD203	M.RESISTOR CH 1/16W 20K	1	
R27	ERJ3RHD303	M.RESISTOR CH 1/16W 30K	1	
R29	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	1	
R31	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	1	
R32	ERJ3RHD123	M.RESISTOR CH 1/16W 12K	1	
R33	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R34	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	1	
R35	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R36,37	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	2	
R38	ERJ3RHD203	M.RESISTOR CH 1/16W 20K	1	
R39	ERJ3RHD303	M.RESISTOR CH 1/16W 30K	1	
R41	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	1	
R42	ERJ3RHD123	M.RESISTOR CH 1/16W 12K	1	
R43	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R44	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	1	
R45	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R46	ERJ3RHD104	M.RESISTOR CH 1/16W 100K	1	
R47	ERJ3RHD303	M.RESISTOR CH 1/16W 30K	1	
R49	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R50	ERJ3RHD243	M.RESISTOR CH 1/16W 24K	1	
R51	ERJ3RHD393	M.RESISTOR CH 1/16W 39K	1	
R53,54	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R55	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R56	ERJ3RHD623	M.RESISTOR CH 1/16W 62K	1	
R57	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R58	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R59	ERJ3RHD393	M.RESISTOR CH 1/16W 39K	1	
R61,62	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R63	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R64	ERJ3RHD623	M.RESISTOR CH 1/16W 62K	1	
R65	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R66	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R67	ERJ3RHD393	M.RESISTOR CH 1/16W 39K	1	
R69,70	ERJ3RHD913	M.RESISTOR CH 1/16W 91K	2	
R71	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R72	ERJ3RHD623	M.RESISTOR CH 1/16W 62K	1	
R73	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R74	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R75,76	ERJ3RHD223	M.RESISTOR CH 1/16W 22K	2	
R77	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R78	ERJ3RHD201	M.RESISTOR CH 1/16W 200	1	
R79	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R80	ERJ3RHD333	M.RESISTOR CH 1/16W 33K	1	
R81	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R82	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R83,84	ERJ3RHD104	M.RESISTOR CH 1/16W 100K	2	
R85	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R86	ERJ3RHD823	M.RESISTOR CH 1/16W 82K	1	
R87	ERJ3RHD104	M.RESISTOR CH 1/16W 100K	1	
R88	ERJ3RHD101	M.RESISTOR CH 1/16W 100	1	
R89	ERJ3GEYJ511	M.RESISTOR CH 1/16W 510	1	
R90	ERJ3GEYJ475	M.RESISTOR CH 1/16W 4.7M	1	
R91	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R92	ERJ3GEYJ202	M.RESISTOR CH 1/16W 2K	1	
R93	ERJ3GEYJ475	M.RESISTOR CH 1/16W 4.7M	1	
R94	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R95	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R96	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R97	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R98	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R99-01	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R102	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R104	ERJ14YJ121	M.RESISTOR CH 1/4W 120	1	
R107	ERJ14YJ121	M.RESISTOR CH 1/4W 120	1	
R109,10	ERJ14YJ181	M.RESISTOR CH 1/4W 180	2	
R111,12	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R113	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R114	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R115	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R116	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R117	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R118	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R119	ERJ3RHD393	M.RESISTOR CH 1/16W 39K	1	ERJ3RHD393V
R120	ERJ3RHD103	M.RESISTOR CH 1/16W 10K	1	
R121-24	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	4	
R125-28	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R129-32	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	4	
R180-87	D1HA10380003	C.RESISTOR 1/16W 10K	8	
R188	D1HA68180001	C.RESISTOR 1/16W 680	1	
R189	D1HA22280002	C.RESISTOR 1/16W 2.2K	1	
R200-05	D3EC45020006	V.RESISTOR 1/4W 5K	6	
S1	YWCHS08B	SWITCH	1	
S2	YWCHS04TB	SWITCH	1	
S3,S4	K0D126A00001	SWITCH	2	
TP1-13	YWRCT2125TPV	TERMINAL PIN	13	
U1	C1ZBZ0001200	IC	1	
U2	C2DBKG000002	IC	1	
U3	YWSN74LS07NS	IC	1	
U4	YWHM6264BLFP	IC	1	
U5	C0JBAB000196	IC	1	
U6	LMC6484IM	IC	1	
U7,U8	C0ABCB000021	IC	2	
U9,10	LMC6484IM	IC	2	
U11	YW,C14051BF	IC	1	
U12	LMC6484IM	IC	1	
U13	C0FBAH000004	IC	1	
U14	C0JBAB000196	IC	1	
U15	C0EBJ0000043	IC	1	
U16	C0BBBB000006	IC	1	
U17	C1DZ00000005	IC	1	
U18	C1DB00000294	IC	1	
U19	C1DB00000295	IC	1	
U20	C0JBCZ000137	IC	1	
U21	YWSN74LS07NS	IC	1	
U22	C0CBAHA00002	IC	1	
U23	C0DBZGH00001	IC	1	YW78L05UATE2
U24	HRD050R6	IC	1	
X1	BCR20V4	HOLDER	1	
Y1	H0J600400003	CRYSTAL OSCILLATOR	1	
■ E2	VEP20908A	COMP P.C.BOARD	1	(RTL)
C1	YGM1B103K1HT	C.CAPACITOR CH 50V 0.01U	1	F1H1H103A190
C2	F3H0J2270002	T.CAPACITOR CH6.3V 220U	1	
C3	5X821K5VT	C.CAPACITOR CH 50V 820P	1	F1H1H821A013
C4	YGM1C101J1HT	C.CAPACITOR CH 50V 100P	1	F1H1H101A231
C5,C6	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	2	F1H1E104A016
C7	YGM1C330J1HT	C.CAPACITOR CH 50V 33P	1	F1H1H330A231
C8	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C10	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C11	ECUX1H030CCV	C.CAPACITOR CH 50V 3P	1	
C12	YGM1B103K1HT	C.CAPACITOR CH 50V 0.01U	1	F1H1H103A190
C13	F3H0J2270002	T.CAPACITOR CH6.3V 220U	1	
C14	5X821K5VT	C.CAPACITOR CH 50V 820P	1	F1H1H821A013
C15	YGM1C101J1HT	C.CAPACITOR CH 50V 100P	1	F1H1H101A231
C16,17	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	2	F1H1E104A016

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C18	YGM1C470J1HT	C.CAPACITOR CH 50V 47P	1	
C19	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C21	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C22	YGM1C050C1HT	C.CAPACITOR CH 50V 5P	1	F1H1H4R9A243
C23	YGM1B103K1HT	C.CAPACITOR CH 50V 0.01U	1	F1H1H103A190
C24	F3H0J2270002	T.CAPACITOR CH6.3V 220U	1	
C25	5X821K5VT	C.CAPACITOR CH 50V 820P	1	F1H1H821A013
C26	YGM1C101J1HT	C.CAPACITOR CH 50V 100P	1	F1H1H101A231
C27,28	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	2	F1H1E104A016
C29	YGM1C470J1HT	C.CAPACITOR CH 50V 47P	1	
C30	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C32	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C33	YGM1C050C1HT	C.CAPACITOR CH 50V 5P	1	F1H1H4R9A243
C34	YGM1C180J1HT	C.CAPACITOR CH 50V 18P	1	F1H1H180A231
C35-38	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	4	F1H1E104A016
C40	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C41	EEVHP1C100	E.CAPACITOR 16V 10U	1	
C42	F3F1C1060002	T.CAPACITOR CH 16V 10U	1	
C43,44	YGM1F105Z1AT	C.CAPACITOR CH 10V 1U	2	
C45	SK31V156KRD0	T.CAPACITOR CH 35V 15U	1	F3H1V1560001
C46	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C47	SK31V156KRD0	T.CAPACITOR CH 35V 15U	1	F3H1V1560001
C48	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
D2,D3	MA3J14300L	DIODE	2	
D5,D6	MA3J14300L	DIODE	2	
D8,D9	MA3J14300L	DIODE	2	
IC1-C3	TC4W53FU	IC	3	
IC4	MC14538BF	IC	1	C0JBAM000009
IC5	YWLM1881M	IC	1	
IC6	C0ABCA000038	IC	1	
J1	P2287	CONNECTOR	1	K1QBB4BB0003
J3	K1QBB1BA0011	CONNECTOR	1	
P1	K1KA03A00055	CONNECTOR	1	
P2	53047-1510	CONNECTOR	1	K1KA15A00022
Q1	2SA1532-CD	TRANSISTOR	1	
Q2,Q3	2SC3931-C	TRANSISTOR	2	
Q4	2SA1532-CD	TRANSISTOR	1	
Q5	2SD1819QRS	TRANSISTOR	1	
Q6,Q7	2SK662-R	TRANSISTOR	2	
Q8	2SC3931-C	TRANSISTOR	1	
Q9	XP4601	TRANSISTOR-RESISTOR	1	
Q10	2SD1820A-R	TRANSISTOR	1	
Q11	2SB1219A-R	TRANSISTOR	1	
Q12	2SA1532-CD	TRANSISTOR	1	
Q13,14	2SC3931-C	TRANSISTOR	2	
Q15	2SA1532-CD	TRANSISTOR	1	
Q16	2SD1819QRS	TRANSISTOR	1	
Q17,18	2SK662-R	TRANSISTOR	2	
Q19	2SC3931-C	TRANSISTOR	1	
Q20	XP4601	TRANSISTOR-RESISTOR	1	
Q21	2SD1820A-R	TRANSISTOR	1	
Q22	2SB1219A-R	TRANSISTOR	1	
Q23	2SA1532-CD	TRANSISTOR	1	
Q24,25	2SC3931-C	TRANSISTOR	2	
Q26	2SA1532-CD	TRANSISTOR	1	
Q27	2SD1819QRS	TRANSISTOR	1	
Q28,29	2SK662-R	TRANSISTOR	2	
Q30	2SC3931-C	TRANSISTOR	1	
Q31	XP4601	TRANSISTOR-RESISTOR	1	
Q32	2SD1820A-R	TRANSISTOR	1	
Q33	2SB1219A-R	TRANSISTOR	1	
Q34	2SA1532-CD	TRANSISTOR	1	
Q36	2SK662-R	TRANSISTOR	1	
R1	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	1	
R2	ERJ3RBD181	M.RESISTOR CH 1/16W 180	1	
R3	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R4	ERJ3RBD511	M.RESISTOR CH 1/16W 510	1	
R5	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6	ERJ3RBD911	M.RESISTOR CH 1/16W 910	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R7	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R8	ERJ3GEYJ162	M.RESISTOR CH 1/16W 1.6K	1	
R9	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	1	
R10	ERJ3RBD102	M.RESISTOR CH 1/16W 1K	1	
R11	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R12	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R13	ERJ3GEYJ202	M.RESISTOR CH 1/16W 2K	1	
R14	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R15,16	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R17	ERJ3RBD362	M.RESISTOR CH 1/16W 3.6K	1	
R18	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R19	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R20	ERJ3RBD821	M.RESISTOR CH 1/16W 820	1	
R22	ERJ3GEYJ132	M.RESISTOR CH 1/16W 1.3K	1	
R23	ERJ3RBD622	M.RESISTOR CH 1/16W 6.2K	1	
R24-27	ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	4	
R28,29	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	2	
R30	ERJ3RBD181	M.RESISTOR CH 1/16W 180	1	
R31	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R32	ERJ3RBD511	M.RESISTOR CH 1/16W 510	1	
R33	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R34	ERJ3RBD911	M.RESISTOR CH 1/16W 910	1	
R35	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R36	ERJ3GEYJ162	M.RESISTOR CH 1/16W 1.6K	1	
R37	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	1	
R38	ERJ3RBD102	M.RESISTOR CH 1/16W 1K	1	
R39	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R40	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R41	ERJ3GEYJ202	M.RESISTOR CH 1/16W 2K	1	
R42	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R43,44	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R45	ERJ3RBD272	M.RESISTOR CH 1/16W 2.7K	1	
R46	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R47	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R48	ERJ3RBD561	M.RESISTOR CH 1/16W 560	1	
R50	ERJ3GEYJ132	M.RESISTOR CH 1/16W 1.3K	1	
R51	ERJ3RBD332	M.RESISTOR CH 1/16W 3.3K	1	
R52-55	ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	4	
R56,57	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	2	
R58	ERJ3RBD181	M.RESISTOR CH 1/16W 180	1	
R59	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R60	ERJ3RBD511	M.RESISTOR CH 1/16W 510	1	
R61	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R62	ERJ3RBD911	M.RESISTOR CH 1/16W 910	1	
R63	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R64	ERJ3GEYJ162	M.RESISTOR CH 1/16W 1.6K	1	
R65	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	1	
R66	ERJ3RBD102	M.RESISTOR CH 1/16W 1K	1	
R67	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R68	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R69	ERJ3GEYJ202	M.RESISTOR CH 1/16W 2K	1	
R70	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R71,72	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R73	ERJ3RBD272	M.RESISTOR CH 1/16W 2.7K	1	
R74	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R75	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R76	ERJ3RBD561	M.RESISTOR CH 1/16W 560	1	
R78	ERJ3GEYJ132	M.RESISTOR CH 1/16W 1.3K	1	
R79	ERJ3RBD332	M.RESISTOR CH 1/16W 3.3K	1	
R80-83	ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	4	
R84	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	1	
R85	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R86	ERJ3RBD223	M.RESISTOR CH 1/16W 22K	1	
R87	ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R88	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	1	
R89	ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R91	ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R92	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R93	ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R94	ERJ3RBD223	M.RESISTOR CH 1/16W 22K	1	
R95	ERJ3RBD302	M.RESISTOR CH 1/16W 3K	1	
R96	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R98	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R106	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
SW1-W3	K0D126A00001	SWITCH	3	
TP1	YWRCT2125TPV	TEST POINT	1	
■ E3	VEP20909A	CONNECTION P.C.BOARD	1	(RTL)
C101	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C102	ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C103	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C104	ECA1CHG10	E.CAPACITOR 16V 1U	1	
C105	ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C106	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	1	F1H1E104A016
C107,08	ECUX1H331JCV	C.CAPACITOR CH 50V 330P	2	
C109	SK31V156KRD0	T.CAPACITOR CH 35V 15U	1	F3H1V1560001
C110,11	ECUX1H331JCV	C.CAPACITOR CH 50V 330P	2	
C113-15	SK31V156KRD0	T.CAPACITOR CH 35V 15U	3	F3H1V1560001
C116,17	YGM1F104Z1ET	C.CAPACITOR CH 25V 0.1U	2	F1H1E104A016
C118,19	SK31V156KRD0	T.CAPACITOR CH 35V 15U	2	F3H1V1560001
D101	SC80204R	DIODE	1	B0JCME000014
D102,03	MA142K	DIODE	2	
F101	473004	FUSE	1	K5G402A00012
IC102	NJM78L09UA	IC	1	C0CBAHC00002
IC101	C0DBZHC00005	IC	1	
IC103	NJM79L05UA	IC	1	C0CBBDC00001
L101	J0JHB0000001	COIL	1	
L102,03	VLQ0163J150	COIL 15UH	2	
L104-13	J0JDC0000016	COIL	10	
P101	K4AC05B00003	CONNECTOR	1	
P102	K2LC108B0005	MODULAR JACK	1	
P103	VJP3993	CONNECTOR (MALE)	1	K1FB106B0003
P104	K1KA02A00045	CONNECTOR	1	
P105	K1KA04A00065	CONNECTOR	1	
P106	K1KA03A00055	CONNECTOR	1	
P107	53047-0610	CONNECTOR	1	K1KA06A00079
P108	K1KA07A00040	CONNECTOR	1	
SW101	SSSF042P6N	SWITCH	1	
SW102	K0D162A00008	SWITCH	1	
TP101	YWRCT2125TPV	TEST POINT	1	
■ E4	1A880S015	MOTOR AMP P.C.BOARD	1	(RTL)
C1	RPE131CH101J	C.CAPACITOR 50V 100P	1	
C2	ECQE1104KF	P.CAPACITOR 63V 0.1U	1	
C3	RPE131CH101J	C.CAPACITOR 50V 100P	1	
C4	ECA1HM010	E.CAPACITOR 50V 1U	1	
C5	EEUGA1E221	E.CAPACITOR 25V 220U	1	
C6,C7	RPE131F104Z5	E.CAPACITOR 50V 0.1U	2	
C8	ECQE1104KF	P.CAPACITOR 63V 0.1U	1	
C9	RPE131CH101J	C.CAPACITOR 50V 100P	1	
C10	ECQE1104KF	P.CAPACITOR 63V 0.1U	1	
C11	ECA1HM010	E.CAPACITOR 50V 1U	1	
C12	RPE131CH101J	C.CAPACITOR 50V 100P	1	
C13	GRM40R223K50	C.CAPACITOR 50V 0.022U	1	
C14	ECQE1104KF	P.CAPACITOR 63V 0.1U	1	
CN1	K1KA09A00038	CONNECTOR	1	
CN2	K1KA02A00045	CONNECTOR	1	
CN3,N4	K1KA02A00060	CONNECTOR	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D1	B0JCEE000001	DIODE	1	
D2-D5	1SS226	DIODE	4	B0ADDJ000002
D6	B0BA01200044	DIODE	1	
F1,F2	K5Y102A00001	FUSE	2	
L1-L4	G0C2R2K00006	COIL	4	
Q1	2SB1219A	TRANSISTOR	1	
R1,R2	ER025CKF1002	M.RESISTOR 1/4W 10K	2	
R3	ERX12SJ1R2	M.RESISTOR 1/2W 1.2	1	
R4	RK73H23H100	M.RESISTOR 10	1	
R5	ER025CKF10R0	M.RESISTOR 1/4W 10	1	
R6,R7	ER025CKF1002	M.RESISTOR 1/4W 10K	2	
R8	ERX12SJ1R2	M.RESISTOR 1/2W 1.2	1	
R9	ER025CKF10R0	M.RESISTOR 1/4W 10	1	
R10,11	ER025CKF1002	M.RESISTOR 1/4W 10K	2	
R12	ERX12SJ1R2	M.RESISTOR 1/2W 1.2	1	
R13	ER025CKF10R0	M.RESISTOR 1/4W 10	1	
R14,15	ER025CKF1002	M.RESISTOR 1/4W 10K	2	
R16	ERX12SJ1R2	M.RESISTOR 1/2W 1.2	1	
R17	ER025CKF10R0	M.RESISTOR 1/4W 10	1	
RL1	G6A-274P12V	RELAY	1	
U1	TA7272P	IC	1	
		MISCELLANEOUS		
	1A355H283-01	PLATE	1	
	1A355H284-01	PLATE	1	
	STDLB2.6-5	SCREW	4	

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